



SEQUENCE LISTING

<110> Orban, Tihamer

<120> AUTOANTIGEN VACCINE

<130> 10276-067001

<140> 10/038,686

<141> 2002-01-04

<150> 60/260,068

<151> 2001-01-05

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 110

<212> PRT

<213> Homo sapiens

<400> 1

Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu
1 5 10 15
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly
20 25 30
Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
35 40 45
Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly
50 55 60
Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu
65 70 75 80
Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys
85 90 95
Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
100 105 110

<210> 2

<211> 585

<212> PRT

<213> Homo sapiens

<400> 2

Met Ala Ser Pro Gly Ser Gly Phe Trp Ser Phe Gly Ser Glu Asp Gly
1 5 10 15
Ser Gly Asp Ser Glu Asn Pro Gly Thr Ala Arg Ala Trp Cys Gln Val
20 25 30
Ala Gln Lys Phe Thr Gly Gly Ile Gly Asn Lys Leu Cys Ala Leu Leu
35 40 45
Tyr Gly Asp Ala Glu Lys Pro Ala Glu Ser Gly Gly Ser Gln Pro Pro
50 55 60
Arg Ala Ala Ala Arg Lys Ala Ala Cys Ala Cys Asp Gln Lys Pro Cys

65 70 75 80
 Ser Cys Ser Lys Val Asp Val Asn Tyr Ala Phe Leu His Ala Thr Asp
 85 90 95
 Leu Leu Pro Ala Cys Asp Gly Glu Arg Pro Thr Leu Ala Phe Leu Gln
 100 105 110
 Asp Val Met Asn Ile Leu Leu Gln Tyr Val Val Lys Ser Phe Asp Arg
 115 120 125
 Ser Thr Lys Val Ile Asp Phe His Tyr Pro Asn Glu Leu Leu Gln Glu
 130 135 140
 Tyr Asn Trp Glu Leu Ala Asp Gln Pro Gln Asn Leu Glu Glu Ile Leu
 145 150 155 160
 Met His Cys Gln Thr Thr Leu Lys Tyr Ala Ile Lys Thr Gly His Pro
 165 170 175
 Arg Tyr Phe Asn Gln Leu Ser Thr Gly Leu Asp Met Val Gly Leu Ala
 180 185 190
 Ala Asp Trp Leu Thr Ser Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu
 195 200 205
 Ile Ala Pro Val Phe Val Leu Leu Glu Tyr Val Thr Leu Lys Lys Met
 210 215 220
 Arg Glu Ile Ile Gly Trp Pro Gly Gly Ser Gly Asp Gly Ile Phe Ser
 225 230 235 240
 Pro Gly Gly Ala Ile Ser Asn Met Tyr Ala Met Met Ile Ala Arg Phe
 245 250 255
 Lys Met Phe Pro Glu Val Lys Glu Lys Gly Met Ala Ala Leu Pro Arg
 260 265 270
 Leu Ile Ala Phe Thr Ser Glu His Ser His Phe Ser Leu Lys Lys Gly
 275 280 285
 Ala Ala Ala Leu Gly Ile Gly Thr Asp Ser Val Ile Leu Ile Lys Cys
 290 295 300
 Asp Glu Arg Gly Lys Met Ile Pro Ser Asp Leu Glu Arg Arg Ile Leu
 305 310 315 320
 Glu Ala Lys Gln Lys Gly Phe Val Pro Phe Leu Val Ser Ala Thr Ala
 325 330 335
 Gly Thr Thr Val Tyr Gly Ala Phe Asp Pro Leu Leu Ala Val Ala Asp
 340 345 350
 Ile Cys Lys Lys Tyr Lys Ile Trp Met His Val Asp Ala Ala Trp Gly
 355 360 365
 Gly Gly Leu Leu Met Ser Arg Lys His Lys Trp Lys Leu Ser Gly Val
 370 375 380
 Glu Arg Ala Asn Ser Val Thr Trp Asn Pro His Lys Met Met Gly Val
 385 390 395 400
 Pro Leu Gln Cys Ser Ala Leu Leu Val Arg Glu Glu Gly Leu Met Gln
 405 410 415
 Asn Cys Asn Gln Met His Ala Ser Tyr Leu Phe Gln Gln Asp Lys His
 420 425 430
 Tyr Asp Leu Ser Tyr Asp Thr Gly Asp Lys Ala Leu Gln Cys Gly Arg
 435 440 445
 His Val Asp Val Phe Lys Leu Trp Leu Met Trp Arg Ala Lys Gly Thr
 450 455 460
 Thr Gly Phe Glu Ala His Val Asp Lys Cys Leu Glu Leu Ala Glu Tyr
 465 470 475 480
 Leu Tyr Asn Ile Ile Lys Asn Arg Glu Gly Tyr Glu Met Val Phe Asp
 485 490 495
 Gly Lys Pro Gln His Thr Asn Val Cys Phe Trp Tyr Ile Pro Pro Ser
 500 505 510
 Leu Arg Thr Leu Glu Asp Asn Glu Glu Arg Met Ser Arg Leu Ser Lys
 515 520 525

A2

Val	Ala	Pro	Val	Ile	Lys	Ala	Arg	Met	Met	Glu	Tyr	Gly	Thr	Thr	Met
530						535						540			
Val	Ser	Tyr	Gln	Pro	Leu	Gly	Asp	Lys	Val	Asn	Phe	Phe	Arg	Met	Val
545					550					555					560
Ile	Ser	Asn	Pro	Ala	Ala	Thr	His	Gln	Asp	Ile	Asp	Phe	Leu	Ile	Glu
				565					570						575
Glu	Ile	Glu	Arg	Leu	Gly	Gln	Asp	Leu							
			580					585							

<210> 3

<211> 979

<212> PRT

<213> Homo sapiens

<400> 3

A2

Met	Arg	Arg	Pro	Arg	Arg	Pro	Gly	Gly	Leu	Gly	Gly	Ser	Gly	Gly	Leu
1				5					10					15	
Arg	Leu	Leu	Leu	Cys	Leu	Leu	Leu	Leu	Ser	Ser	Arg	Pro	Gly	Gly	Cys
			20					25					30		
Ser	Ala	Val	Ser	Ala	His	Gly	Cys	Leu	Phe	Asp	Arg	Arg	Leu	Cys	Ser
		35					40					45			
His	Leu	Glu	Val	Cys	Ile	Gln	Asp	Gly	Leu	Phe	Gly	Gln	Cys	Gln	Val
	50					55					60				
Gly	Val	Gly	Gln	Ala	Arg	Pro	Leu	Leu	Gln	Val	Thr	Ser	Pro	Val	Leu
65					70					75					80
Gln	Arg	Leu	Gln	Gly	Val	Leu	Arg	Gln	Leu	Met	Ser	Gln	Gly	Leu	Ser
				85					90					95	
Trp	His	Asp	Asp	Leu	Thr	Gln	Tyr	Val	Ile	Ser	Gln	Glu	Met	Glu	Arg
			100					105					110		
Ile	Pro	Arg	Leu	Arg	Pro	Pro	Glu	Pro	Arg	Pro	Arg	Asp	Arg	Ser	Gly
		115					120					125			
Leu	Ala	Pro	Lys	Arg	Pro	Gly	Pro	Ala	Gly	Glu	Leu	Leu	Leu	Gln	Asp
	130					135					140				
Ile	Pro	Thr	Gly	Ser	Ala	Pro	Ala	Ala	Gln	His	Arg	Leu	Pro	Gln	Pro
145					150					155					160
Pro	Val	Gly	Lys	Gly	Gly	Ala	Gly	Ala	Ser	Ser	Ser	Leu	Ser	Pro	Leu
				165					170					175	
Gln	Ala	Glu	Leu	Leu	Pro	Pro	Leu	Leu	Glu	His	Leu	Leu	Leu	Pro	Pro
			180					185					190		
Gln	Pro	Pro	His	Pro	Ser	Leu	Ser	Tyr	Glu	Pro	Ala	Leu	Leu	Gln	Pro
		195					200					205			
Tyr	Leu	Phe	His	Gln	Phe	Gly	Ser	Arg	Asp	Gly	Ser	Arg	Val	Ser	Glu
	210					215					220				
Gly	Ser	Pro	Gly	Met	Val	Ser	Val	Gly	Pro	Leu	Pro	Lys	Ala	Glu	Ala
225					230					235					240
Pro	Ala	Leu	Phe	Ser	Arg	Thr	Ala	Ser	Lys	Gly	Ile	Phe	Gly	Asp	His
				245					250					255	
Pro	Gly	His	Ser	Tyr	Gly	Asp	Leu	Pro	Gly	Pro	Ser	Pro	Ala	Gln	Leu
			260					265					270		
Phe	Gln	Asp	Ser	Gly	Leu	Leu	Tyr	Leu	Ala	Gln	Glu	Leu	Pro	Ala	Pro
		275					280					285			
Ser	Arg	Ala	Arg	Val	Pro	Arg	Leu	Pro	Glu	Gln	Gly	Ser	Ser	Ser	Arg
	290					295					300				
Ala	Glu	Asp	Ser	Pro	Glu	Gly	Tyr	Glu	Lys	Glu	Gly	Leu	Gly	Asp	Arg
305					310					315					320
Gly	Glu	Lys	Pro	Ala	Ser	Pro	Ala	Val	Gln	Pro	Asp	Ala	Ala	Leu	Gln
				325					330					335	

Arg Leu Ala Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu
 340 345 350
 Thr Pro Glu Gln Leu Ser Thr Leu Leu Thr Leu Leu Gln Leu Leu Pro
 355 360 365
 Lys Gly Ala Gly Arg Asn Pro Gly Gly Val Val Asn Val Gly Ala Asp
 370 375 380
 Ile Lys Lys Thr Met Glu Gly Pro Val Glu Gly Arg Asp Thr Ala Glu
 385 390 395 400
 Leu Pro Ala Arg Thr Ser Pro Met Pro Gly His Pro Thr Ala Ser Pro
 405 410 415
 Thr Ser Ser Glu Val Gln Gln Val Pro Ser Pro Val Ser Ser Glu Pro
 420 425 430
 Pro Lys Ala Ala Arg Pro Pro Val Thr Pro Val Leu Leu Glu Lys Lys
 435 440 445
 Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Ala Gly Gln Pro Ser Ala
 450 455 460
 Arg Pro Ala Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys Pro
 465 470 475 480
 Leu Ser Leu Ala Ala Gly Val Lys Leu Leu Glu Ile Leu Ala Glu His
 485 490 495
 Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly Pro
 500 505 510
 Ala Leu Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu Ala
 515 520 525
 Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala Gln
 530 535 540
 Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu Ala
 545 550 555 560
 Ala Ala Val Leu Pro Gln Thr Ala His Ser Thr Ser Pro Met Arg Ser
 565 570 575
 Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu Val
 580 585 590
 Ala Leu Ala Val Ala Leu Cys Val Arg Gln His Ala Arg Gln Gln Asp
 595 600 605
 Lys Glu Arg Leu Ala Ala Leu Gly Pro Glu Gly Ala His Gly Asp Thr
 610 615 620
 Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys Ser
 625 630 635 640
 Leu Phe Asn Arg Ala Glu Gly Pro Pro Glu Pro Ser Arg Val Ser Ser
 645 650 655
 Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser His
 660 665 670
 Ser Ser Thr Pro Ser Trp Cys Glu Glu Pro Ala Gln Ala Asn Met Asp
 675 680 685
 Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu Arg
 690 695 700
 Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr Gln
 705 710 715 720
 Ala Glu Pro Asn Thr Cys Ala Thr Ala Gln Gly Glu Gly Asn Ile Lys
 725 730 735
 Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile Lys
 740 745 750
 Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala Ser
 755 760 765
 Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr Gln
 770 775 780
 Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp Glu

A2

785 790 795 800
 Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp Gly
 805 810 815
 Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ala Ser Leu Tyr
 820 825 830
 His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu Asp
 835 840 845
 Phe Leu Val Arg Ser Phe Tyr Leu Lys Asn Val Gln Thr Gln Glu Thr
 850 855 860
 Arg Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly Thr
 865 870 875 880
 Pro Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn Lys
 885 890 895
 Cys Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp Gly
 900 905 910
 Ala Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn Arg
 915 920 925
 Met Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu His
 930 935 940
 Val Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe Glu
 945 950 955 960
 Phe Ala Leu Thr Ala Val Ala Glu Glu Val Asn Ala Ile Leu Lys Ala
 965 970 975
 Leu Pro Gln

<210> 4
 <211> 622
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Ser Met Arg Ser Pro Ile Ser Ala Gln Leu Ala Leu Asp Gly Val
 1 5 10 15
 Gly Thr Met Val Asn Cys Thr Ile Lys Ser Glu Glu Lys Lys Glu Pro
 20 25 30
 Cys His Glu Ala Pro Gln Gly Ser Ala Thr Ala Ala Glu Pro Gln Pro
 35 40 45
 Gly Asp Pro Ala Arg Ala Ser Gln Asp Ser Ala Asp Pro Gln Ala Pro
 50 55 60
 Ala Gln Gly Asn Phe Arg Gly Ser Trp Asp Cys Ser Ser Pro Glu Gly
 65 70 75 80
 Asn Gly Ser Pro Glu Pro Lys Arg Pro Gly Ala Ser Glu Ala Ala Ser
 85 90 95
 Gly Ser Gln Glu Lys Leu Asp Phe Asn Arg Asn Leu Lys Glu Val Val
 100 105 110
 Pro Ala Ile Glu Lys Leu Leu Ser Ser Asp Trp Lys Glu Arg Phe Leu
 115 120 125
 Gly Arg Asn Ser Met Glu Ala Lys Asp Val Lys Gly Thr Gln Glu Ser
 130 135 140
 Leu Ala Glu Lys Glu Leu Gln Leu Leu Val Met Ile His Gln Leu Ser
 145 150 155 160
 Thr Leu Arg Asp Gln Leu Leu Thr Ala His Ser Glu Gln Lys Asn Met
 165 170 175
 Ala Ala Met Leu Phe Glu Lys Gln Gln Gln Gln Met Glu Leu Ala Arg
 180 185 190
 Gln Gln Gln Glu Gln Ile Ala Lys Gln Gln Gln Gln Leu Ile Gln Gln

A2

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<210> 5
<211> 483
<212> PRT
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A2

<213> Homo sapiens

<400> 5

Met Ser Gly His Lys Cys Ser Tyr Pro Trp Asp Leu Gln Asp Arg Tyr
 1 5 10 15
 Ala Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Arg Tyr Trp Glu
 20 25 30
 Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His
 35 40 45
 Val Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His
 50 55 60
 Ser Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr
 65 70 75 80
 Gln Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys
 85 90 95
 Phe Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met
 100 105 110
 Met Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu
 115 120 125
 Ala Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe
 130 135 140
 Arg His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu
 145 150 155 160
 Gln Cys Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val
 165 170 175
 Ser Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg
 180 185 190
 Lys Val Gln Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu
 195 200 205
 Lys Met Asp Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys
 210 215 220
 Asn Leu Leu Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His
 225 230 235 240
 Phe Trp Glu Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe
 245 250 255
 Lys Gly Tyr Gln Pro Tyr Glu Phe Thr Thr Leu Lys Ser Leu Gln Asp
 260 265 270
 Pro Met Lys Lys Leu Val Glu Lys Glu Lys Lys Lys Ile Asn Gln
 275 280 285
 Gln Glu Ser Thr Asp Ala Ala Val Gln Glu Pro Ser Gln Leu Ile Ser
 290 295 300
 Leu Glu Glu Glu Asn Gln Arg Lys Glu Ser Ser Ser Phe Lys Thr Glu
 305 310 315 320
 Asp Gly Lys Ser Ile Leu Ser Ala Leu Asp Lys Gly Ser Thr His Thr
 325 330 335
 Ala Cys Ser Gly Pro Ile Asp Glu Leu Leu Asp Met Lys Ser Glu Glu
 340 345 350
 Gly Ala Cys Leu Gly Pro Val Ala Gly Thr Pro Glu Pro Glu Gly Ala
 355 360 365
 Asp Lys Asp Asp Leu Leu Leu Leu Ser Glu Ile Phe Asn Ala Ser Ser
 370 375 380
 Leu Glu Glu Gly Glu Phe Ser Lys Glu Trp Ala Ala Val Phe Gly Asp
 385 390 395 400
 Gly Gln Val Lys Glu Pro Val Pro Thr Met Ala Leu Gly Glu Pro Asp
 405 410 415
 Pro Lys Ala Gln Thr Gly Ser Gly Phe Leu Pro Ser Gln Leu Leu Asp
 420 425 430

A2

Gln Asn Met Lys Asp Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala
 435 440 445
 Ala Ser Asp Leu Thr Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro
 450 455 460
 Leu Ser Asn Pro Asp Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu
 465 470 475 480
 Leu Asn Ala

<210> 6
 <211> 471
 <212> PRT
 <213> Homo sapiens

<400> 6
 Met Ser His His Pro Ser Gly Leu Arg Ala Gly Phe Ser Ser Thr Ser
 1 5 10 15
 Tyr Arg Arg Thr Phe Gly Pro Pro Pro Ser Leu Ser Pro Gly Ala Phe
 20 25 30
 Ser Tyr Ser Ser Ser Ser Arg Phe Ser Ser Ser Arg Leu Leu Gly Ser
 35 40 45
 Ala Ser Pro Ser Ser Ser Val Arg Leu Gly Ser Phe Arg Ser Pro Arg
 50 55 60
 Ala Gly Ala Gly Ala Leu Leu Arg Leu Pro Ser Glu Arg Leu Asp Phe
 65 70 75 80
 Ser Met Ala Glu Ala Leu Asn Gln Glu Phe Leu Ala Thr Arg Ser Asn
 85 90 95
 Glu Lys Gln Glu Leu Gln Glu Leu Asn Asp Arg Phe Ala Asn Phe Ile
 100 105 110
 Glu Lys Val Arg Phe Leu Glu Gln Gln Asn Ala Ala Leu Arg Gly Glu
 115 120 125
 Leu Ser Gln Ala Arg Gly Gln Glu Pro Ala Arg Ala Asp Gln Leu Cys
 130 135 140
 Gln Gln Glu Leu Arg Glu Leu Arg Arg Glu Leu Glu Leu Leu Gly Arg
 145 150 155 160
 Glu Arg Asp Arg Val Gln Val Glu Arg Asp Gly Leu Ala Glu Asp Leu
 165 170 175
 Ala Ala Leu Lys Gln Arg Leu Glu Glu Thr Arg Lys Arg Glu Asp
 180 185 190
 Ala Glu His Asn Leu Val Leu Phe Arg Lys Asp Val Asp Asp Ala Thr
 195 200 205
 Leu Ser Arg Leu Glu Leu Glu Arg Lys Ile Glu Ser Leu Met Asp Glu
 210 215 220
 Ile Glu Phe Leu Lys Lys Leu His Glu Glu Glu Leu Arg Asp Leu Gln
 225 230 235 240
 Val Ser Val Glu Ser Gln Gln Val Gln Gln Val Glu Val Glu Ala Thr
 245 250 255
 Val Lys Pro Glu Leu Thr Ala Ala Leu Arg Asp Ile Arg Ala Gln Tyr
 260 265 270
 Glu Ser Ile Ala Ala Lys Asn Leu Gln Glu Ala Glu Glu Trp Tyr Lys
 275 280 285
 Ser Lys Tyr Ala Asp Leu Ser Asp Ala Ala Asn Arg Asn His Glu Ala
 290 295 300
 Leu Arg Gln Ala Lys Gln Glu Met Asn Glu Ser Arg Arg Gln Ile Gln
 305 310 315 320
 Ser Leu Thr Cys Glu Val Asp Gly Leu Arg Gly Thr Asn Glu Ala Leu
 325 330 335

A2

Leu Arg Gln Leu Arg Glu Leu Glu Glu Gln Phe Ala Leu Glu Ala Gly
 340 345 350
 Gly Tyr Gln Ala Gly Ala Ala Arg Leu Glu Glu Glu Leu Arg Gln Leu
 355 360 365
 Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln Glu Leu Leu Asn
 370 375 380
 Val Lys Met Ala Leu Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu Leu
 385 390 395 400
 Glu Gly Glu Glu Ser Arg Ile Ser Val Pro Val His Ser Phe Ala Ser
 405 410 415
 Leu Asn Ile Lys Thr Thr Val Pro Glu Val Glu Pro Pro Gln Asp Ser
 420 425 430
 His Ser Arg Lys Thr Val Leu Ile Lys Thr Ile Glu Thr Arg Asn Gly
 435 440 445
 Glu Gln Val Val Thr Glu Ser Gln Lys Glu Gln Arg Ser Glu Leu Asp
 450 455 460
 Lys Ser Ser Ala His Ser Tyr
 465 470

A2